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Range-rearing Chickens

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Range-Rearing Chickens

L. M. Hurd

Your next year's profits or losses depend largely on the way pullets develop; therefore, you should give special attention to every management detail. Chickens on range need good pasture and an abundance of clean wholesome food as well as water which must be available at all times. Labor-saving and time-saving equipment make the work of caring for chickens easier and less expensive, and a well-planned disease-control program prevents the loss of many birds. The suggestions on the following pages concerning feeding, management, and growing chickens on range may help to make your poultry enterprise more profitable and less time-consuming.

The Rearing Range

The kind of soil best adapted to growing chickens is a sandy or gravelly loam that can be cultivated easily. The land should always be in sod when the chickens use it.

Good pasture reduces the cost of growing pullets from 5 to 15 per cent, depending on the management program followed. One of the secrets of maintaining a good pasture or range is to cut it frequently and not to overstock it. Under average seasonal conditions, one acre of good pasture provides enough green feed for 600 growing pullets.

The following seed mixture has given good results in most sections of New York State and on many different types of soil:

1 pound Ladino clover
1 pound wild white clover
5 pounds timothy
5 pounds Kentucky bluegrass

The mixture is planted at the rate of 12 pounds to the acre. Seedings are usually made without a nurse crop. Information on cultural methods may be obtained from your county agricultural agent, or from the Department of Agronomy at the New York State College of Agriculture at Ithaca, New York.

Have the range within sight of the farm house and not too far from other farm buildings. It is unwise to have a range along a well-traveled highway, even if there is a fence to prevent the chickens from running onto the road, as many birds get through the fence and are killed by passing automobiles.

Drainage and shade

Ranges on wet, poorly drained soil or in dense shade are poor investments, for coccidiosis organisms and roundworm eggs thrive best under such conditions. Shady places also harbor slugs and certain insects that are the carriers of tapeworm in-

festation. Natural shade is desirable, but it should not be so dense as to prevent the sun from shining on the ground for quite a period at some time during the day. Provide artificial shade if there is no other shade (figure 1).

Transfer of Chickens to Range

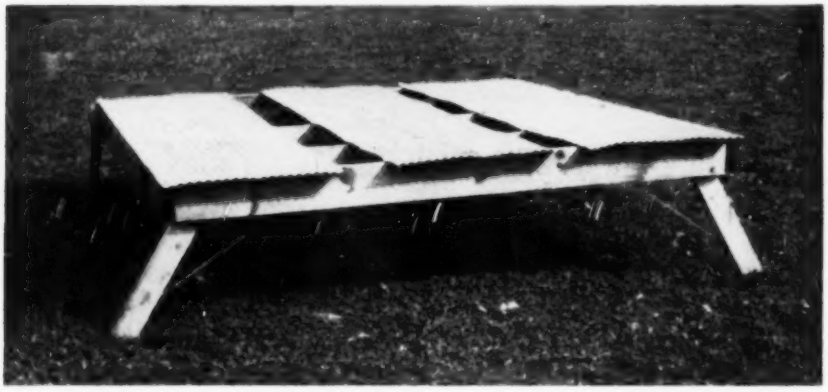
Usually it is not advisable to transfer chickens from the brooder house to range shelters before the grass shows green on the range. In most parts of New York State this is sometime in April. Chickens should be from 8 to 10 weeks of age and well feathered when they are put out early in the season. Later, in warm weather, you can transfer them at from 7 to 9 weeks of age.

It is a good plan to confine the birds to the shelter for the first three or four days until they feel at home in their new quarters. If the weather is cold, cover one end or a large part of the shelter with sacks or with some similar material to protect the birds against wind and rain. Sometimes it may be necessary to cover the wire floor for a week or two with heavy paper and 2 or 3 inches of litter. Provide feed and water in the shelter, especially when it is stormy for the first two or three weeks. Be sure to prevent the chickens from getting under the wire floors and into the droppings by blocking all openings under the building. If necessary, put blocks under the runners to make the shelter level.

Feeding and Management

Pullets should make good growth and be as completely developed as possible when laying starts. Do not cut down on mash and grain to make the birds eat more grass. This may cut the cost of feed a little, but, if carried too far, will interfere with the

Figure 1. A range shade in open fields can be moved easily to prevent killing the grass and for better sanitation



development of the birds. It is better to keep mash and grain before the birds at all times in hoppers and let them eat what grass and clover they want.

Less expensive rations may be used when the birds run on good pastures. In such rations, certain ingredients carrying riboflavin and vitamins A, D and B_{12} may be omitted. Most commercial feed companies can supply such rations or you may feed home-mixed ones. On some farms where grain is grown, it may be more economical to feed a simple ration of ground grain to which a mineral mixture is added, and whole grain. For example, pullets make good growth and development on the Cornell Poultry Experimental Farm when they were fed ground wheat and a mineral mixture as mash with wheat for the whole-grain part of the diet. These birds had good Ladino clover pasture. The mineral mixture consisted of 4 pounds of dicalcium phosphate, 1 pound of ground limestone, and 1 pound of iodized salt for each 100 pounds of ground wheat. Other ex-

Figure 2. A truck to service a range saves much time and many steps

Figure 3. This range poultry feeder is light, inexpensive to construct, easily filled and cleaned, and keeps the feed dry. For details of construction refer to Cornell Extension Bulletin 752, *Equipment to Save Labor on the Poultry Farm*

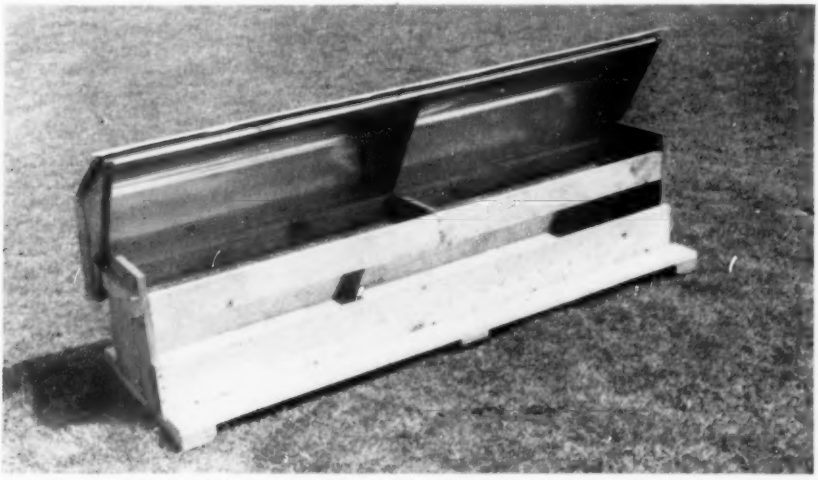


Figure 4. A lime spreader is used to scatter pellets or grain on range

periments indicate that equal parts of ground corn and wheat as mash and whole grain are satisfactory. When, however, the feed of the bird is limited to grain and pasture, it is necessary to have good succulent pasture constantly available.

Before the chickens are a month old, place one or two poles across the back part of the colony brooder house, a foot or two from the floor, to train the chickens to roost. Such roosts may be a part of a wire-covered frame, one side of which rests on the floor while the other side is fastened to the side wall of the room. Such a frame makes it easier for the chickens to jump up on the poles and keeps them from crowding into the corners. Roosts are usually provided in range shelters, because early roosting prevents crowding and spreads the birds out so they have more freedom of action and better air than they would if grouped close together on the floor. As a result, growth is better. As more birds learn to roost and as they grow larger, supply more and higher roosts. No roosts are needed in the shelter or brooder house if you plan to use no roosts later in the laying house.

Sand, shavings, peat moss, or straw make the best litter for a brooder-house floor during summer. It is unnecessary to clean such a building during the season unless it gets excessively dirty or wet. Shelters usually have 1-by-4-inch welded wire floors which permit the droppings to fall to the ground below.

To prevent possible infestation from red mites, paint the perches and adjacent parts of the building with carbolineum, creosote, or a mixture of 5 per cent DDT and kerosene or crude carbolic acid and kerosene. Do this in the fall after the houses are

Figure 5. Nests similar to those used in the laying house may be provided for pullets starting to lay on range. They may be hung on the side of the colony house as shown

cleaned so the fumes have a chance to disappear before you place chicks in them. Usually one application of these products a year is enough to control the mites; but if mites appear during the summer, spray the buildings with a mild oily product, such as kerosene or waste oil from automobiles, or with a mixture of both materials. These materials are not so effective as the other ones mentioned and you may have to spray several times during the season.

When there is more than one shelter or colony house, never allow too many pullets to form the habit of roosting in one building. The buildings should be at least 100 feet apart, to keep the birds evenly distributed. It is not advisable to try to house more than from 125 to 150 growing

Figure 6. A trailer has many uses on a poultry range

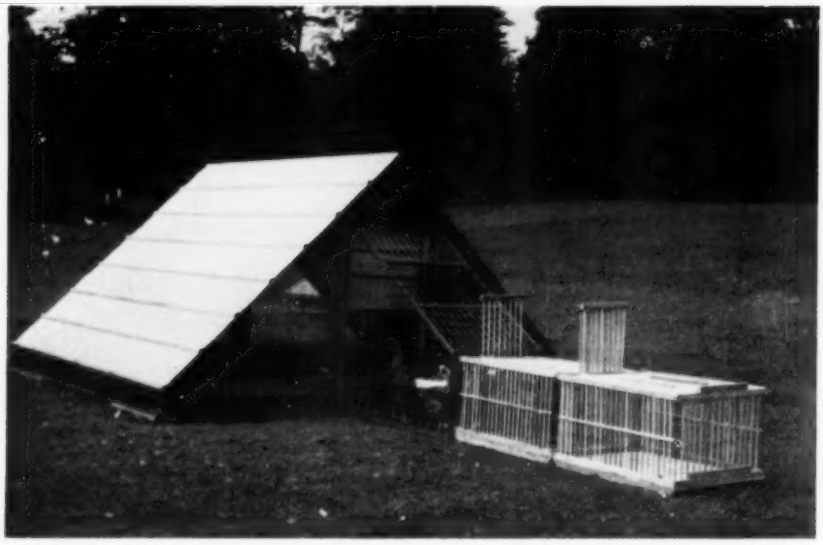


Figure 7. Commercial catching coops can be set up end to end, with the connecting ends open so all birds in the house can be caught at one time. A frame is built to fit the door of the shelter on one side and the end of the catching coop on the other. This frame rests on the ground. Rubber tubing on the sloping top of the frame prevents the birds from flying out of the opening, but makes it possible for the operator to reach in and drive the birds into the coop

pullets in a Cornell colony house or range shelter. Good ventilation is essential on hot nights. In addition to the regular ventilators, remove the glass sash in the front of the colony house. Ventilation is not as much of a problem with shelters because they are open on both ends or along the front.

Range shelters with wire floors may remain in the same location all season or may be removed once or twice if there is too great an accumulation of manure or the grass is likely to be destroyed over a wide area around the shelter. Clean up the manure after you move the shelter.

If there are many hatches and there are several weeks difference in their ages, provide a separate range for each group or hatch or place the houses much farther apart than for groups of the same age. Otherwise, the older pullets will annoy the young ones and prevent normal growth.

Water Supply

Running water automatically controlled (figures 8 and 9) saves much labor and assures an ample supply on the range at all times. Precautions should, however, be taken to prevent chickens from working continually in moist areas of soil around the watering places. A wire- or slat-covered frame 4 feet square and 8 or 10 inches high (figure 8) under each water pipe

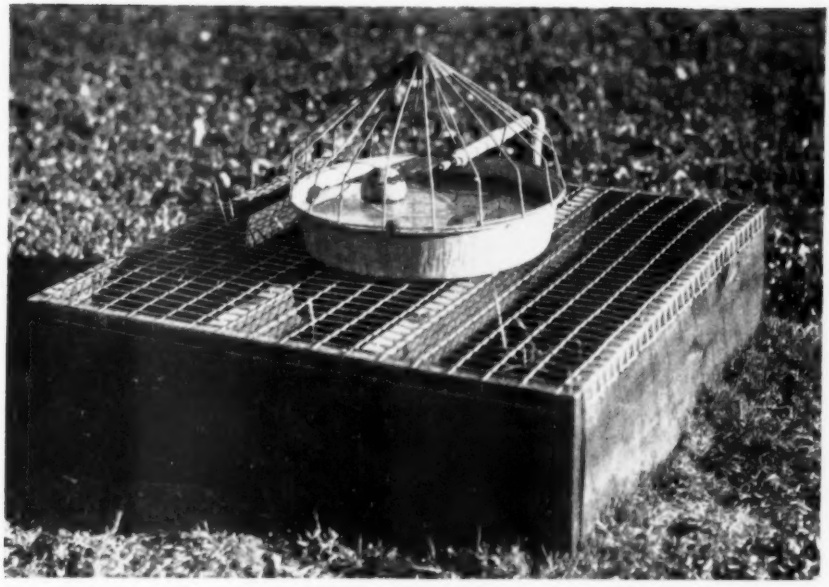
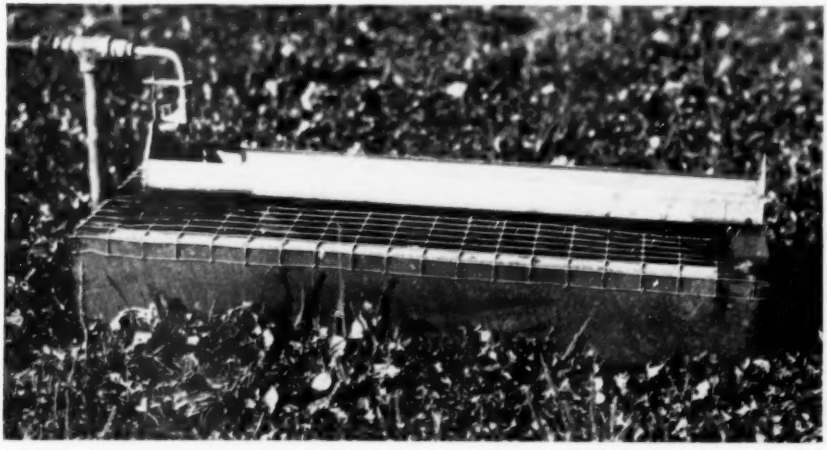


Figure 8. A float valve controls the flow of water into the pan. A large frame under the pan confines the spilled water, especially if a shallow hole is made under the pan. The frame, 4 feet square by 10 inches high, has heavy cross pieces to support the pan and wire; it has been strengthened by bending the wire over the edges

Figure 9. A spring valve automatically controls the flow of running water into this trough on range. When the trough is full, its weight pulls down on the spring and closes the valve. When water is used and the trough becomes lighter, the spring is released and the valve opens. The 25 feet of hose attached to the water line makes it possible to move the trough and stand regularly to prevent wet spots, filth, and grass killing

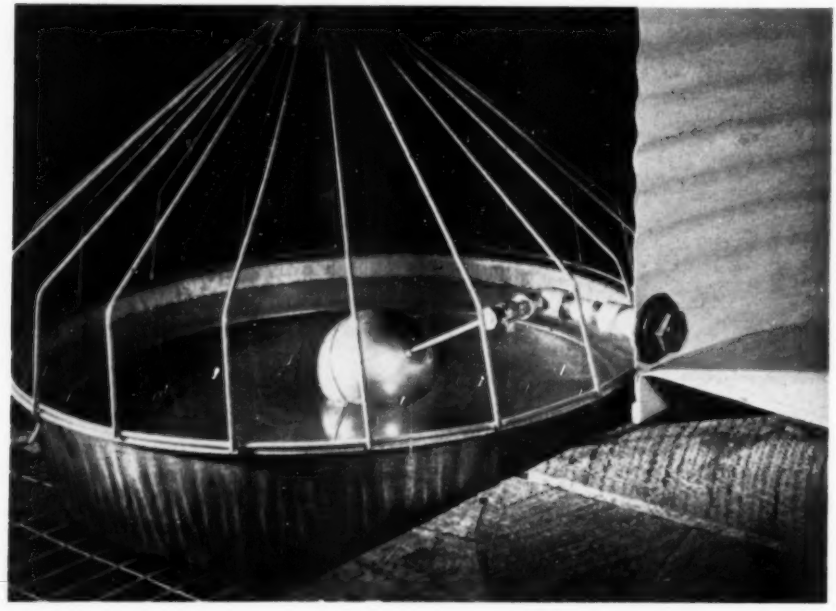


is a help. Dig a shallow pit under the platform to catch the water. This arrangement is helpful in the control of coccidiosis and roundworms.

If water cannot be piped to the range and you have to haul it by truck, use a milk or oil barrel as storage (figure 10). Water may be released from the barrel by an automatic float valve near the bottom (figures 11 and 12). The barrel can be easily placed on a wire- or slat-covered sled and moved frequently to prevent bare wet spots. This arrangement saves considerable labor.

Figure 10. A float valve may be used on a barrel waterer, such as this one used on the Cornell rearing range. The frame on which the pan rests is extended to provide a raised platform to hold the barrel above the level of the pan

Figure 11. A section of the steel barrel has been cut away to show how to attach the float valve when a steel barrel is used. The grill over the watering pan keeps the chickens out and prevents interference with the float



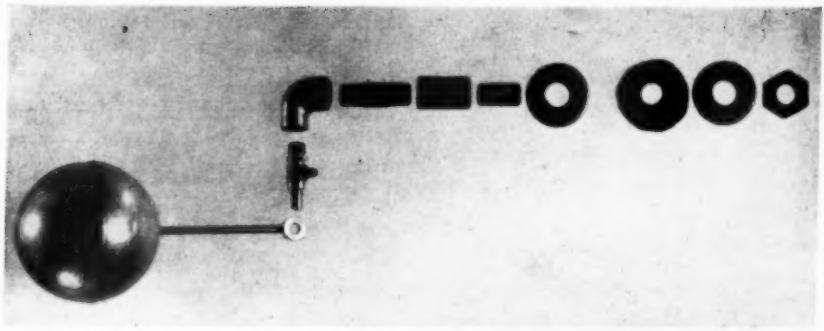


Figure 12. The parts and connections used in the float valve on the barrel shown in figure 12 arranged in the order in which they should be assembled

Figure 13. Where running water is not available, a tank trailer makes the watering job easier

Management of Growing Cockerels

The breeding cockerels should have a grass range by themselves, the same as the pullets, with all the necessities of life.

If you keep only a few cockerels as breeders, they may be allowed to run with the pullets. The recommendation is not more than 1 cockerel to 12 pullets.

Normal Growth of Chickens

The normal rate of maturity of pullets is influenced by the strain and by the time of year they hatch. When properly grown, well-bred Leghorn pullets hatched between January 1 and April 15 start to lay between 150 to 180 days of age; heavy breeds at 160 to 190 days of age. Pullets hatched in late spring and in summer mature several days later than those hatched later. Mature body weight varies with the strain. Leghorns weigh from 3½ to 4½ pounds and heavy breeds from 5 to 6 pounds at the time of laying the first egg. At the 1952–53 New York Random Sample Egg Laying Test, the average weight of the Leghorn pullets at 160 days was 4.11 pounds; weight of heavy breeds was 5.12 pounds. The average age when the Leghorn flocks in this test reached 50 per cent production was 179 days; for the heavy-breed flocks it was 185 days. These birds were started in confinement, but were given access to pasture from six weeks to laying age.

Clean Ground and Disease Prevention

Many common poultry diseases and parasites, such as coccidiosis, blackhead, and worms, are spread

Table 1. Growth Rate and Feed Consumption of Single Comb White Leghorns and Heavy Breed Chickens

Source	Single Comb White Leghorn pullets, 1952 (Cornell University)		*Single Comb White Leghorns, (average large and small strains; equal number of cockerels and pullets, 1947–48		*Average New Hampshires, Rhode Island Reds, Barred Cross, and Indian River Cross; equal number of cockerels and pullets, 1947–48	
Age	Body weight	Total feed to date (all mash)	Body weight	Total feed to date (variety of rations)	Body weight	Total feed to date (variety of rations)
	Pounds	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*
Day old	0.09	0	0.09	0	0.09	0
Weeks						
2	0.28	0.49	0.25	0.35	0.33	0.43
4	0.64	1.55	0.55	1.05	0.77	1.38
6	1.10	2.91	1.20	3.00	1.50	3.30
8	1.30	4.06	1.70	4.59	2.20	5.50
9	...	...	2.00	5.60	2.40	6.48
				Pullets Only		
10	...	...	1.9	6.27	2.5	7.25
12	2.14	9.36	2.3	8.28	3.3	10.89
14	...	...	2.7	11.34	4.2	14.82
16	2.77	13.84	3.1	14.57	4.7	18.86
18	...	...	3.3	18.48	5.6	22.36
20	3.36	18.86	3.5	21.35	6.1	26.79
23	3.73	23.16	...	...	...	...

*This information is used by special permission of the Beacon Milling Company, Cayuga, New York.

over a field by the droppings of growing chickens. The greatest concentrations of these droppings is near the brooder houses, range shelters, feeders, and waterers where the birds come and go the most. If the houses remain in the same location for several years, or a large number of birds run on a small yard, great numbers of germs and worm eggs may accumulate in the soil. The greater the number, the greater the chances of infecting each succeeding crop of chickens. It is well known that some of these disease organisms live for weeks or months, and even from one growing season to the next, in the soil. This is called *soil contamination*.

Tests show that heavy applications of lime on the land do not destroy disease organisms, but do help in many instances to sweeten the soil so clover or grasses will grow better. Natural processes, if given enough time, will destroy the disease organisms.

A land rotation system is one of the best ways to keep a field reasonably free of disease organisms. This consists of having two or three separate rearing ranges which are used once every two or three years. About the same results can be obtained, if the field is large, by rotating the position of the colony houses or shelters on the same field each year so each building is at least 100 feet from the previous year's location. Changing the location of the feeders and waterers frequently during the season is helpful in preventing concentration of disease organisms. With either system, do not allow more than 600 growing chickens for each acre of land. This number prevents the land from becoming bare and limits the number of birds in one area on the land.

Take the following precautions to keep soil contamination as low as possible and to prevent the introduction of disease:

1. Never allow old and growing young stock to mix or be closely located with each other on the rearing range.

2. Never spread droppings and used litter on land used by the growing stock.

3. Prevent tracking disease to the young chickens in the following ways: Have a separate caretaker for the young chickens who should never go near the old stock, or have the caretaker change his rubbers, boots, or shoes, and his outside garments when he goes from the young to the old stock or from the old to the young. The best procedure is to always do the chores for the young stock before going to the old stock.

4. Never use in the houses on the range the crates, implements, feeders, and the like that have been used in caring for the old birds unless this equipment and the tools have been thoroughly cleaned and disinfected.

5. Burn all carcasses of dead birds, or use a disposal pit.

6. Keep all persons, such as poultry dealers, cullers, and visitors who are likely to carry disease away from the rearing range.

Placing chickens on uncontaminated land is not a cure-all, but most poultrymen know that chickens usually do well if started in new houses on land that has *not* been used previously by chickens. It is sometimes called "beginner's luck." But it is not all luck; it is freedom from disease and parasites. Chickens may have any of the diseases or parasites mentioned when they are grown on a new location or on rotated ranges; but if the precautions mentioned are followed carefully, the chances are less.

Some poultrymen may not have enough land to prevent serious soil contamination if he allows his chickens to run on the land. Under such conditions, the birds should be reared in confinement. It is not advisable to allow chickens to run out of a permanent house on the land, year after year, because of the danger of contracting disease from soil that may be seriously contaminated near the house after many years of use. On the other hand, where land is available, it is common practice to start chickens in a permanent brooder house and when they are old enough to go without heat to transfer them to range shelters on grass-covered fields. Whether you can follow this plan or not, of course, depends on the time of year the chickens are hatched. Pullets that mature before grass starts to grow in the spring should be raised entirely in confinement. It is poor efficiency to move the birds to a range for a short time and then move them back to winter quarters.

Inoculation for infectious bronchitis and vaccination for fowl pox and, in some cases for Newcastle disease, may be carried out while the birds are on range. For details, consult your nearest regional poultry diagnostic laboratory or write the New York State Veterinary College, Cornell University, Ithaca, New York.

Losses from Natural Enemies

Hawks, crows, owls, rats, foxes, skunks, weasels, cats, and dogs are the most dreaded natural enemies of growing chickens. If you have had trouble with any of these pests in other years, it will pay to give some thought to reducing such losses.

Hawks and crows

Hawks and crows are the most common pests. They are cunning and daring, and not easily frightened away. Once they start to harass a flock, they continue until the chickens are nearly full-grown. They usually make their raids early in the morning and late in the afternoon about sunset. Hawks and crows generally watch from some moderately high point for an opportunity to pounce upon their victims unexpectedly. They may be caught in small steel "jump traps," placed on top of tall fence posts or short poles near the brooder houses (figure 14). The ring on the chain of the trap shown in figure 14 should slide along a wire which is fastened along the

pole to the ground. When the trap is sprung, it falls to the ground but is held by the wire. This arrangement is required by law. Sometimes crows are frightened away if one or more are killed and hung up where the chickens range.

Figure 14. A steel jump trap on top of a fence post or pole will catch hawks, owls, and crows. The ring on the chain of the trap can slide along the wire. When the trap is sprung, it falls to the ground but will be held by the wire. This arrangement is required by law

The Maine Agricultural Experimental Station succeeded in keeping hawks and crows away by tying streamers, a few feet apart, to twine strung across the field above where the chickens ranged.

One sure way to prevent loss of very small chickens from hawks and crows is to fence a small area of ground and cover it with 2-inch-mesh wire. Confinement rearing in such cases is an advantage.

Rats and weasels

The best way to control rats and weasels is to close or remove all of their possible breeding and hiding places. Place the brooder houses or shelters at least 150 feet from the nearest permanent building, stone wall, or hedge. Never leave near the buildings any refuse or material that might harbor small animals. Keep the grass near the buildings short. The floors of portable colony houses should be at least 1 foot from the ground, and the space underneath open and free.

A method of poisoning rats, which does not endanger the chickens or other animals, is described in Cornell Extension Bulletin 353, *Rats and Their Control.*

Skunks, foxes, dogs, and cats

If skunks, foxes, or dogs bother the chickens, a fence 5 or 6 feet high with the bottom sunk in the ground 3 or 4 inches is a good investment. The squares in the fence should be small enough to prevent animals from crawling through. Foxes will dig under or climb through a fence

unless a charged wire is placed around the fence on the outside. This wire should be about 8 or 10 inches from the ground and 6 inches from the fence (figure 15).

Keep the grass and weeds under the wire from growing by burning or by spraying them with oil to prevent short-circuiting the wire. It is advisable, when foxes are a problem, to hunt them during the winter, look for dens in the spring, and carry on a trapping program. The State Conservation Department will upon request gladly give directions for trapping. Skunks may be trapped when the law permits. When a cat forms the habit of catching little chickens, the only remedy is to kill the cat.

Figure 15. A charged wire outside a fenced poultry yard prevents foxes and other small animals from digging under the fence into the yard. The wire is about 8 or 10 inches from the ground

Owls

Owls kill many chickens that roost in trees or exposed places. They even enter the open windows of brooder houses. If traps on the top of poles fail to stop their depredations, screen the windows of the brooder house and confine the chickens at night.

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